

(b) whether the engineers sent abroad for the purpose of studies in this field are working on the project;

(c) if so, the area-wise total expenditure incurred on this plan till now;

(d) whether the Government are satisfied with the progress made in this regard; and

(e) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF POWER AND MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (DR. S. VENUGOPALACHARI) : (a) to (e). During 1986-87 Government initiated a coordinated research programme on development on single junction amorphous silicon solar cells with the participation of seven research institutions and industry. Under this programme the research groups at National Physical Laboratory (NPL) and Indian Association for Cultivation of Science (IACS) successfully developed single junction amorphous silicon solar cells of 10-12% efficiency during 1990-92, which was comparable to the international level achieved at that time. In 1992 the Bharat Heavy Electricals Limited (BHEL) commissioned a pre-commercial pilot plant facility and successfully demonstrated fabrication of single junction amorphous silicon modules of 1 ft x 1 ft size and some applications based on these modules.

Since 1992 the BHEL has demonstrated batch fabrication of amorphous silicon modules for field trials. The research groups at NPL and IACS are pursuing further research in amorphous silicon cells. The IACS group is now working on development of double junction amorphous silicon solar cells.

Some engineers and scientists from the research groups at NPL, IACS and BHEL were sent abroad for study tours and training on operation of equipment. Most of them are continuing to work on amorphous silicon solar cell and module research and development. The basic objective of amorphous silicon solar cell technology development has thus been met.

During the Eighth Plan period a total amount of Rs. 7.64 crores has been spent so far on the development of amorphous silicon solar cells, of which an amount of Rs. 6.54 crores has been spent on the pilot plant activities.

Power Projects in U.P.

3843. DR. BALIRAM : Will the PRIME MINISTER be pleased to state :

(a) the details of the progress made in power projects being implemented in Uttar Pradesh;

(b) the number of proposals lying pending with the Union Government for approval in regard to set up new power projects in the State;

(c) the details thereof, project-wise;

(d) whether foreign investors/private power producers are involved in setting up power projects in the State; and

(e) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF POWER AND MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (DR. S. VENUGOPALACHARI) : (a) The details of sanctioned on-going projects in the State of Uttar Pradesh, which are at various stages of execution, are given below :

S. No.	Name of Project and Capacity (MW)	Anticipated year of commissioning/ Status
1.	Tehri St. I (4x250)	2002
2.	Dhauliganga (4x70)	2004-2005
3.	Lakhwar Vvesi (3x100 + 2x60)	Beyond 9th Plan
4.	Vishnuprayag (4x100)	Posed to Private Sector
5.	Srinagar (5x66)	Posed to Private Sector
6.	Sobla (2x3)	1997
7.	Maneri Bhali St. II (4x76)	Posed to Private Sector
8.	Feroze Gandhi (Unchahar TPP) (2x210)	July, 2000
9.	Tanda TPP 4 (110)	June, 1997

(b) and (c). Out of these, Detailed Project Reports (DPR) for the following projects which are now for execution in the private sector, have been received in the Central Electricity Authority (CEA) and are under examination :

S. No.	Name of Project and Promotor	Installed Capacity (MW)
1.	Vishnuprayag (M/s. JIL)	400
2.	Srinagar HEP (M/s. Duncas Industries Ltd.)	330

In addition, Detailed Project Report (DPR) for Rosa (Phase-I) of M/s. Indo-Gulf Fertilizers and Chemical Corporation Ltd., for capacity of 567 MW has also been received in the Central Electricity Authority and is under examination.

(d) and (e). Yes, Sir. Apart from the projects indicated in reply to parts (a) to (c), for MOU projects with estimated cost over Rs. 100 Crores. Pacific Electric Power Development has proposed setting up Jawaharpur TPS (500 MW) in the State of Uttar Pradesh.